

Flight Data Recorder (FDR)

- L-3 Communications Fairchild F-800
- Recorded about 25 hours of data
- 56 parameters verified
- Left aileron surface position data invalid

14 Code of Federal Regulations

Part 121.344

- Required 34 parameters
- Included left and right aileron surface positions

Executive Airlines' Actions

- Modified its 41 ATR-72s
- Supplemental type certificate
- Two aileron surface position sensors added to each airplane
- 41 ATR-72s = 82 sensors on its ATR-72 fleet
- String potentiometers

String Potentiometer



- String attached to aileron linkage
- Aileron movement detected by sensor
- Sensor produces voltage input
- Voltage converted to digital value

FDR Functional Checks

- Only means to detect flight control sensor failures
- Performed every 3,000 flight cycles
- Last performed on airplane on January 3, 2003
- No problems noted with aileron surface position data

Executive Airlines

- In last 3 1/2 years, replaced 38 aileron surface position sensors
- 46 percent failure rate
- Failures typically caused by wear or weather



NTSB